

Preface

P.1 Introduction

These Volumes present information developed as part of the Final Remedial Investigation, Risk Assessment, and Feasibility Study (RI/RA/FS) for the Former DuPont Works Site (Site) located in DuPont, WA (See Figure P-1). These reports were stipulated in a Consent Decree, effective July 1991, between the lead agency, Washington State Department of Ecology (Ecology), and the principle responsible parties, Weyerhaeuser Company (Weyerhaeuser) and E.I. duPont de Nemours and Company, Inc. (DuPont). Per the Consent Decree, the reports were developed in accordance with the Model Toxics Control Act Cleanup Regulation (MTCA). Draft RI/RA/FS reports were completed in 1994 and 1995, submitted to Ecology, and underwent public review. The draft Final RI/RA/FS reports, presented here, have been developed to satisfy comments on the draft reports and to accurately reflect existing conditions and future land use at the Site. In addition, these reports incorporate a variety of agreements that have been reached with Ecology following completion of the draft studies in 1994 and 1995.

P.2 Property History

The Site property was originally used by Native Americans. European settlement began in 1832, when the Hudson's Bay Company established a cabin/storehouse on nearby Puget Sound at the mouth of Sequallitchew Creek, northwest of the Site (City of DuPont, 1995). In 1833, Hudson's Bay built Fort Nisqually, which was located in the northern portion of the Site. Ten years later, a new Fort Nisqually was built at a location adjacent to but outside the eastern edge of the Site.

The DuPont Company acquired the property in 1906 and constructed an explosives plant and the historical Village of DuPont as a company town for plant workers (the historical village area is located approximately 1 mile southeast of the Site). DuPont continued to manufacture explosives at the Site until the mid 1970s, when it sold the property and adjacent areas to the Weyerhaeuser Company. Weyerhaeuser and its subsidiary, Weyerhaeuser Real Estate Company (WRECO), still own the majority of the approximately 2,500 acres in the area, which they named Northwest Landing. Northwest Landing is a planned community in the City of DuPont and includes the Site. WRECO has begun to develop Northwest Landing on some of its lands within the City, but cannot develop the Site until the cleanup has been completed.

P.3 Site Regulatory History

The Site was used for the manufacture of commercial explosives from 1909 to 1976. Production of explosive material ceased and decommissioning of the buildings began in 1976, when Weyerhaeuser purchased the property from DuPont. As part of the cleanup process, asbestos was removed, salvageable materials were taken out, and structures were either burned or demolished. Actions taken at the Site subsequent to the shutdown in 1976 include the following:

- In 1985, Weyerhaeuser initiated studies to determine whether hazardous substances were present.
- In 1986, a Phase I Site Survey and Review was conducted to identify areas on Site that may be of environmental concern.
- In 1986, soil contamination was first documented and reported to Ecology.
- In 1987, a Phase II Site Characterization study was performed, which characterized the type, concentration, and distribution of constituents at 38 areas on the Site.

- In 1989, a Baseline Human Health Risk Assessment was performed using results of the Phase II survey.
- In 1991, Weyerhaeuser and DuPont signed a Consent Decree (No. 91 2 01703 1) with Ecology, where they agreed to study the Site and complete an RI, RA, and FS. The Site was divided into two main areas: Parcel 1 (approximately 636 acres); and Parcel 2 (approximately 205 acres).
- In 1994 and 1995, Draft RI, RA, and FS reports were submitted to Ecology and underwent public review.
- In 1996, based on the result of interim source removal actions, Ecology approved a Cleanup Action Plan (CAP) for Parcel 2 that provided for no further remediation activities except for the institutional controls to maintain the industrial use of Parcel 2.
- In 1997, Parcel 2 was deleted from the Consent Decree, and the deed requiring institutional controls to maintain the industrial use was recorded in the Pierce County Auditor's Office.
- Between 1990 and 2001, while studies and negotiations were ongoing, Weyerhaeuser and DuPont undertook numerous interim source removal actions to clean up soil and/or debris at the Site, in accordance with MTCA and the Consent Decree.

P.4 Description of Reports

In fulfillment of the provisions of the Consent Decree, RI, RA, and FS reports were prepared. A description of the contents of each of these reports is presented below.

- **RI** – The purpose of the RI was to collect sufficient information regarding the Site to enable the completion of the RA and FS. The RI characterizes the nature and extent of contamination based on the existing conditions at the Site. The RI Report presents the analytical data for the media that have been collected at the Site. The data are presented for each RI area, which was defined based on historical manufacturing and production operations at the Site.
- **RA** – In contrast to the RI, the RA evaluates Site conditions in relation to future land uses at the Site. The RA identifies default soil cleanup levels, and presents the methods used to derive Site-specific soil levels that are protective of human health and ecological receptors based on future land use. These cleanup levels and remediation levels are compared to Site constituent concentrations in order to identify which areas require additional evaluation in the FS.
- **FS** – The FS evaluates alternative potential cleanup methods designed to meet the remedial action objectives for the Site. The FS Report provides information for Weyerhaeuser and DuPont to recommend alternatives for remediation of selected areas, including both no action and action alternatives. Ecology will evaluate the FS and select the remedial measures it believes are appropriate. Weyerhaeuser and DuPont will complete the needed detailed design and implementation of the remedy selected by Ecology in the Cleanup Action Plan.

P.5 Report Organization and Documents

This RI/RA/FS report should be reviewed together to better understand the relationship between the Site study activities. The RI/RA/FS are interdependent Reports that are organized as follows:

Volume I – RI and Appendices

Appendix A - Field Procedures

Appendix B - Soil Quality Data

Appendix C - Groundwater, Surface Water and Freshwater Sediment Quality Data

Appendix D - Laboratory Physical Soils Testing

Appendix E - Data Quality Assessment

Volume II - RA and Appendices

- Appendix A – Ecological Risk Assessment Summary
- Appendix B – Evaluation Unit Sample Groupings
- Appendix C – Letters and Other Documentation of Site-Specific Determinations
- Appendix D – Toxicity Information For Select Constituents
- Appendix E – Cleanup Level and Remediation Level Calculations
- Appendix F – Summary Statistics and Comparison to Standards

Volume III - FS and Appendices

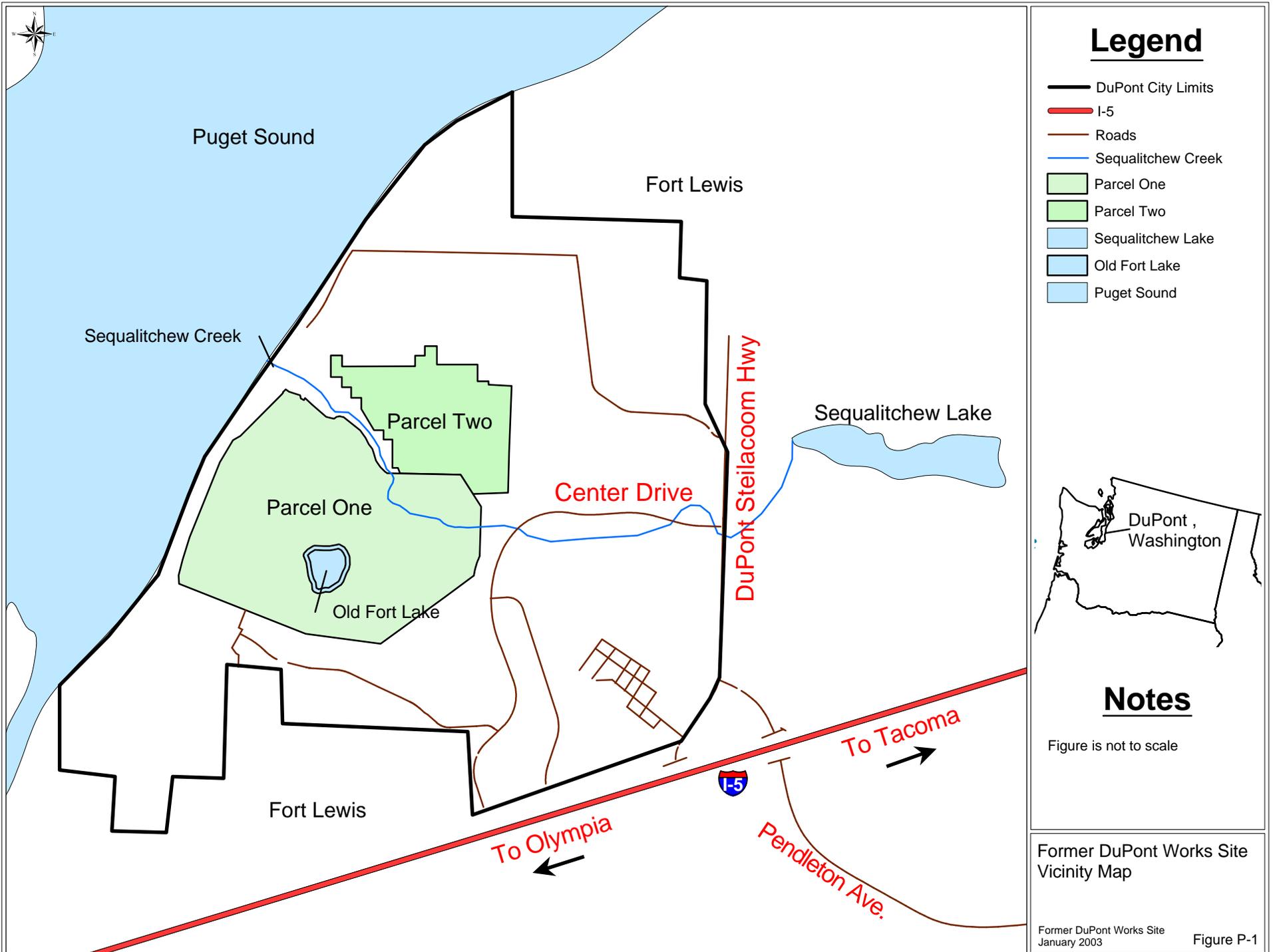
- Appendix A – Description of Remediation Technologies for Soil
- Appendix B – Overview of Soil Testing Procedures and Data Interpretation
- Appendix C – Lead and Arsenic Soil characterization and Treatability Studies
- Appendix D – Arsenic Wet Screening Study
- Appendix E – Ranking of Alternatives
- Appendix F – Cost Estimate for Remedial Alternatives Analyzed in Detail
- Appendix G – Estimation of Minimum Soil Volume Required for Cost-Effective On-Site Treatment
- Appendix H – Development of Soil Remediation Levels for the Golf Course Groundskeeper
- Appendix I – Impracticability of Groundwater Remediation at the Former DuPont Works Site, DuPont, Washington.

An Executive Summary is included with each Volume.

FINAL

Human Health and Ecological Risk Assessment for the Former DuPont Works Site





Legend

-  DuPont City Limits
-  I-5
-  Roads
-  Sequalitchew Creek
-  Parcel One
-  Parcel Two
-  Sequalitchew Lake
-  Old Fort Lake
-  Puget Sound



Notes

Figure is not to scale

Former DuPont Works Site
Vicinity Map

Former DuPont Works Site
January 2003

Figure P-1

P.6 References

City of DuPont. 1995 Comprehensive Plan. Adopted July 25, 1995.

MTCA (Model Toxics Control Act Cleanup Regulation). Chapter 173-340 WAC. Feb. 12, 2001. Ecology Publication 94-06.